MATERIAL SAFETY DATA SHEET

(MSDS)

Section I :MANUFACTURER IDENTIFICATION / CHEMICAL IDENTITY:

Manufacturer :
P.W. GILLIBRAND CO.,INC.
5131 TAPO CANYON ROAD
SIMI VALLEY CA 93062

Tel : (805) 526-2195
Fax :(805) 522-4031
Date prepared : July 16,1999

Chemical Identity : CRYSTALLYNE SILICA (CAS N.14808-60-7)

Section II :HAZARDOUS INFORMATION/IDENTITY INFORMATION

Chemical components: Silica, Crystalline Quartz (respirable).
Specific Chemical Identity: Silicon Dioxide,SiO2.
Common Names : Silica Sand,Crystalline Sand,Quartz,Flint, Filter Sand,Filter Gravel,Glass sand,Frac Sand, Construction Sand,Construction Gravel, Trade names.
Trade names: 12-16-20-30-50-60-70-80-90-120 and different blends. 30x140,G-Series Sand,T-Series Sand and different blends for Golf Course and other Sport fields.

Permissible Exposure Limits: Exposure to airborne crystalline silica shall not exceed an 8 hour time weighted average (TWA) limit as stated in 29CFR1910.1000.
Threshold Limit Values (TLVs) for exposure to crystalline silica:
-Crystalline silica TLV: 10/(%crystalline silica+2)mg/m3.
-Total silica TLV: 30/(%crystalline Silica+2)mg/m3
-ACGIH TLV : 0.1 mg/m3 for 8 hour time weighed average for 100% Crystalline Silica.
Other recommended limits :
-NIOSH TLV : 0.05 mg/m3 for up to 10 hour shift,40 hour week for 100% Crystalline Silica.
-CAL-OSHA : 0.1 mg/m3 for Quartz
5 mg/m3 for respirable particulates

See Threshold limit Value and Biological Exposure Indices For American Conference of Government Industrial Hygienists (ACGIGH), latest edition.

CAUTION :

Crystalline Silica as trydimite and Cristobalite are more fibrogenic than Crystalline Silica as Quartz.Their TLV are one-half the TLV for Crystalline Silica as Quartz. Respirable Crystobalite & Respirable trydimite are below limit of detecting in P.W. Gillibrand Sand.

Section III : PHYSICAL/CHEMICAL PROPERTIES

Boiling Point : 4046 deg F (2230 deg C)
Specific Gravity (H2O = 1) : 2.60-2.65
Melting Point : 3050F (1677C)
Vapor Pressure : None
Evaporation Rate : (Butyl Acetate=1) : None
Vapor Density : (Air = 1) : None
Solubility in Water :insoluble
Appearance : White,Silver,Grey,Tan,Granular,Crushed or Ground.
Odor : None Taste : None

Section IV : FIRE AND EXPLOSION DATA :

Flash Point : Non-flammable
Flammable limits : None LEL : None UEL : None
Extinguishing Media : None required.
Special Fire fighting Procedures : N/A
Unusual Fire and Explosion Hazards :
Crystalline Silica is normally non-flammable and non-explosive. However incompatibility conditions may cause fires.
(see section V for these conditions).

Section V : REACTIVITY DATA :

Stability : Stable.
Conditions to avoid : Incompatibility
Incompatibility : Avoid contacts with Oxidizing agents such as : Molten magnesium,Fluorine,Chlorine trifluoride,Manganese trioxide,Oxygen difluoride,or Hydrofluoric acid may cause fires or Corrosive gazes.
Hazardous Polymerization : will not occur.
Hazardous Decomposition or byproducts : Silica will dissolve in Hydrofluoric acid and produce a corrosive gas : Silicon tetrafluoride

Section VI : HEALTH HAZARD DATA :

Routes of Entry :
Inhalation : Yes Skin : No Ingestion : No
Health Hazards :
Prolonged exposure to Crystalline Silica by inhalation may cause Silicosis,a fibrosis(scarring) of the lungs which can be progressive and may lead to death.
There are 3 different types of Silicosis :
Acute : which can develop quickly,even in a few months,from Exposure to extremely high concentrations.
Accelerated : which,develop after 5 to 10 years of exposure To high concentration.
Chronic : Usually occure 10 years or more after exposure to relatively low concentrations.

Carcinogenity :
Crystalline Silica (Quartz) inhaled from occupational sources is classified by the International Agency for Research on Cancer (IARC) as : Class I Carcinogenic to humans(IARC publication: "IARC Monographs on the evaluation of the carcinogenic risk to humans-Silica,Some Silicates,Coal Dust and Para-aramid fibris -volume 69-1997).

The National Toxicology Program's (NTP'S) of the U.S. Department of Health and Human Services,on its Sixth annual Report On Carcinogens,1992,lists Crystalline Silica(respirable) as a Substance which may reasonably be anticipated to be a Carcinogen. OSHA doesn't list Crystalline Silica as a Carcinogen.

NOTE:
The state of California requires the following statement : **Airborne particles of respirable size of Crystalline Silica are known to the State of California to cause Cancer.**
Crystalline Silica is on the California Governor's List as a hazardous Chemical.
In California,it is regulated under Proposition 65.
(Health and Safety Code Sections 25249.5 through 25249.13 and also Title 22 of the California Code of Regulations,Sections 12000 through 14000).

Tuberculosis:
Silicosis increases the risk of tuberculosis

Scleroderma :
There is evidence that exposure to respirable Crystalline Silica Or that the disease Silicosis is associated with the increased Incidence of Scleroderma: an autoimmune disorder manifested by a Fibrosis(Scarring)of the skin and internal organs.

Nephrotoxicity :
Several studies suggest that exposure to respirable Silica Or the disease Silicosis is associated with the increased Incidence of kidney disorders.

Eyes Contact:
Crystalline Silica may cause abrasion of the Cornea.Overexposure may cause eye tissue inflammation.
NIOSH recommends not to wear contact lenses when working with Crystalline Silica.

Signs and Symptoms of Exposure :

	Chronic Silicosis	Acute Silicosis
-Shortness of breath	x	x
-Wheezing	x	x
-Cough	x	x
-Sputum Production	x	x
-Weight loss		x
-Fever		x

The symptoms of Scleroderma include thickening and stiffness of the skin,particularly in the the fingers,shortness of breath, difficulty swallowing and Joint problems.

Medical Conditions generally aggravated by exposure :

Bronchitis
Emphysema
Asthma
Smoking is known to aggravate the effects of exposure.

Emergency First Aid Procedures :

Eyes Contact:

For Sand in eyes,immediately flush with clear cold water and/or Obtain competent medical assistance as necessary.

Inhalation:

In case of gross inhalation,remove the person to fresh air,give artificial respiration by a CPR trained person if needed and seek medical attention.

Skin Contact:

Wash thoroughly with water in case of skin contact.

Section VII : PRECAUTIONS FOR SAFE HANDLING AND USE

Do not use this product for sandblasting without a type CE supplied air respirator with a full facepiece,hood,or helmet,operated in a positive pressure mode.
NIOSH continues to document serious health effects due to Crystalline silica overexposure,many of which can be attributed to ineffective respiratory protection programs.

Steps to be taken in case Material is released or Spilled:
Wear NIOSH/MSHA/OSHA approved respirator.
Use dustless method (water or HEPA-type vacuum) if material not contaminated. Otherwise use recommended method for contaminate.
Use water sprays and shovels to clean up spills.
Do not dry sweep this product with brooms.
Do not use compressed air to clean up the product.

Waste Disposal Method:
Crystalline Silica (Quartz) is not classified at the moment as a hazardous waste under the Resource Conservation and Recovery Act (RCRA) or its regulations,40 CFR§261et seq.
Dispose in accordance with Federal, State and Local Regulations.

Precautions to be taken in handling,use and storing :
Do not breathe dust.Use adequate ventilation and dust collection devices.
Keep airborne particulates below the PEL.
Practice good housekeeping.
Maintain,clean, and fit test respirators in accordance with OSHA Regulations.
Wash or vacuum clothing which become dusty.
Avoid breakage of bagged material or spills of bulk material.

Section VIII : CONTROL MEASURES

Engineering and Administrative Controls

Use designed ventilation systems and/or wet methods to remove crystalline Silica from workplace air.

Use administrative controls such as job rotation to supplement engineering controls and respiratory protection.

Respiratory Protection:

Test the workplace to determine the level of airborne Crystalline Silica to check the effectiveness of the control measures in Keeping the silica levels below the Exposure limit.

Test the employee personal breathing zone for Crystalline Silica Using respirable dust sampling equipment.

The Occupational Safety and Health Administration (OSHA) General Industry Standard for Respiratory Protection 29CFR 1910.134 requires that a written program be established by the employer.

Respiratory Medical Surveillance Program :

The program should include, at the minimum the following :

- Complete work and respiratory medical history;
- Respiratory Symptom Questionnaire;
- Periodic chest x-ray, interpreted by a physician certified By NIOSH as a B reader with demonstrated proficiency in the Classification of Silicosis;
- Evaluation by a physician with special attention to the lungs.

Respiratory protective equipment :

Select respiratory protection based on the results of the workplace dust surveys.

Choose the proper respiratory protection that meets the requirements of the following chart:

Concentration (in multiples of Standard)	Recommended Respirator type
Less or equal 5 times	-Any particulate respirator
Less or equal 10 times	-Any particulate respirator except single-use or quarter-mask respirator
Less or equal 50 times	-A high efficiency particulate filter respirator with a full facepiece. -Any supplied-air respirator with a full facepiece, helmet, or hood. -Any self-contained breathing apparatus with a full facepiece.
Less or equal 500 times	-A powered air-purifying respirator with a high efficiency particulate filter. -A type C supplied-air respirator Operated in pressure-demand or Other positive pressure or Continuous-flow mode.
More than 500 times Or entry and escape from unknown concentrations	-Self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive pressure mode. -A combination respirator which

includes a type C supplied-air respirator with a full facepiece operated in pressure-demand or other positive pressure mode.

Use NIOSH/MSHA approved equipment.
Refer to 29CFR$1910.134 and 42 CFR$84

Other Protective Clothing or equipment :

Use gloves, protective clothing and ANSI-approved eye protection with this product.

Work/Hygienic Practices :
Avoid creating and breathing dust.
Warn and train your employees and customers of the hazards of this product in accordance with applicable "RIGHT TO KNOW" practices.
Do not smoke if working with Silica Products.

Other Information :
Hazardous Material Information systems (HMIS) :

Health :	See Section VI
Flammability :	0
Reactivity :	0
Protective Equipment :	E

National Fire Protection Association (NFPA) :

Health :	0
Flammability :	0
Reactivity :	0

OSHA HAZARD COMMUNICATION:

This product falls under the OSHA Hazard Communication Standard 29 CFR 1910.1200 .
29CFR 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, and 1928.21, and State and Local worker or Community "right to know" laws and regulations should be strictly followed.
Every employer has the obligation to warn, protect, and train workers about workplace hazards and to provide a safe work environment.

NOTICE:
THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE CORRECT. HOWEVER, P.W. GILLIBRAND CO., INC MAKES NO GUARANTEE OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED WITH RESPECT TO THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ANY LIABILITY IN CONNECTION WITH ANY USE OF THIS INFORMATION AND OR ANY HARMFUL EFFECTS WHICH MAY BE CAUSED BY EXPOSURE TO ITS SILICA SAND. DISTRIBUTERS, CUSTOMERS AND USERS OF SILICA SAND MUST COMPLY WITH ALL APPLICABLE HEALTH AND SAFETY FEDERAL, STATE, LOCAL LAWS, REGULATIONS AND ORDERS, AND MUST SEEK MEDICAL, LEGAL, AND TECHNICAL OPINIONS REGARDING THEIR USE AND THEIR HAZARDS.

State of California
Air Resources Board

Executive Order G-00-066

Certification of Abrasives for Permissible Outdoor Blasting

WHEREAS, Health and Safety Code section 41900 authorizes the Air Resources Board (ARB) to adopt abrasive blasting standards;

WHEREAS, in Title 17, California Code of Regulations, section 92000, et seq, the ARB has established abrasive blasting standards;

WHEREAS, Title 17, California Code of Regulations, section 92500(c), provides in part that any permissible abrasive blasting operation conducted outside a permanent building must use exclusively wet abrasive blasting, hydroblasting, vacuum blasting, or abrasives certified by the ARB for permissible dry outdoor blasting;

WHEREAS, the abrasives listed in Exhibit A (attached) have been tested in accordance with "Method of Test for Abrasive Media Evaluation," Test Method No. California 371-A, dated May 15, 1975, including the "Visible Emission Evaluation Test Method for Selected Abrasives Used in Permissible Dry Outdoor Blasting" as adopted by the Air Resources Board on April 1, 1991 for some selected abrasives, and all have been found to comply with the abrasive certification performance standards set forth in Title 17, California Code of Regulations, section 92530(b);

WHEREAS, the ARB's Executive Officer pursuant to Health and Safety Code section 39516 issued Executive Order G-891 delegating to the Chief of the Board's Compliance Division the authority to certify abrasives in accordance with Title 17, California Code of Regulations, section 92530(a);

NOW, THEREFORE, I, James J. Morgester, Chief of the Air Resources Board's Compliance Division, order certified the abrasives listed in Exhibit A for permissible dry outdoor blasting pursuant to Title 17, California Code of Regulations, section 92530;

IT IS FURTHER ORDERED pursuant to Title 17, California Code of Regulations, section 92530 (a), that the certifications granted by this Executive Order will expire on the respective dates listed in Exhibit A and thereafter no previously listed abrasive will be permissible for dry outdoor blasting until recertified in accordance with Title 17, California Code of Regulations, section 92530;

IT IS FURTHER ORDERED that Executive Order G-00-056 is superseded by this order.

Executed this 26th day of December, 2000 at Sacramento, California.

James J. Morgester, Chief
Compliance Division

Executive Order G-00-066

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Company	Brand name or Grade	Expires
Oglebay Norton Minerals, Inc. Fred Licon P. O. Box 12642 El Paso, TX 79912 (915) 532-1611 FAX (915) 544-7011 Plant 34 San Marcos Dr. El Paso, TX	Rapid Blast 16-50 Rapid Blast 20-50	8/31/02 8/31/02
P.W. Gillibrand Co., Inc. Bennie A. Theising 5131 Tapo Canyon Road Simi Valley, CA 93063 (805) 526-2195 FAX (805) 522-4031 Plant 5810 Bennett Road Simi Valley, CA	Silver Sand #12 Silver Sand #16 Silver Sand #20 Silver Sand #30	8/31/02 8/31/02 8/31/02 8/31/02
Pittsburgh Abrasives & Minerals Company 230 Old Haymaker Road Monroeville, PA 15146 (412) 372-5150 FAX (412) 372-3106 Plant Universal Abrasives & Minerals (Pvt.) Ltd. No. A-83 Second Street SIPCOT Industrial Area Tuticorin, 628008 Tamilnadu, India	Panther-Garnet Star-Garnet	8/31/02 8/31/02
Poly - Pacific International, Incorporated Ross Atkinson 8918 – 18 Street Edmonton, Alberta T6P 1K6 Canada (780) 467-3612 FAX (780) 464-1852 Plant 8918 – 18 Street Edmonton, Alberta, Canada	MultiCut™ Plastic Abrasive Media Type II Urea MultiCut™ Plastic Abrasive Media Type V Acrylic	8/31/02 8/31/02